



## MANITOBA RENAL PROGRAM

<b>SUBJECT</b> <ul style="list-style-type: none"> <li>Use of BARD Dialysis Catheter Repair Kit</li> </ul>	<b>SECTION</b> 30.20 Vascular Access
	<b>CODE</b> 30.20.12
<b>AUTHORIZATION</b> <ul style="list-style-type: none"> <li>Professional Advisory Committee, Manitoba Renal Program</li> <li>Nursing Leadership Council, SBGH</li> </ul>	<b>EFFECTIVE DATE</b> June 1997
	<b>REVISION DATE</b> September 2013 September 2015 February 2017 October 2018

### PURPOSE:

- To repair a cracked or broken female leur lock connector, or repair a damaged extension where there is a minimum of 4.5 cm of viable extension on catheters specified by the BARD catheter repair kit specification sheet.

### POLICY:

- A physician's order is required to repair catheters.
- This procedure is done by physicians for patients at St. Boniface Hospital and Seven Oaks Hospital.
- Nurses working in Hemodialysis at Brandon Regional Health Centre, HSC and Local Renal Health Centres may utilize this procedure to repair catheters once they have reviewed this procedure. Two nurses are required to repair the catheter. It is recommended that one of the nurses reads this document out loud while the other nurse performs the procedure.
- Aseptic technique is to be used throughout this procedure.
- Using the repair kit will affect the instillation volumes. Instillation volumes will need to be recalculated. Calculations are provided on the priming volume label.
- Ensure using the appropriate manufacturer specific repair kit for the catheter type. Check the expiry date on the catheter repair kit package,
- If damage to catheter is determined to be a result of manufacturer defect, ensure the appropriate WRHA logistics complaint form is completed.

### EQUIPMENT:

- 1 BARD Access Systems catheter repair kit with replacement connector
- 2 pairs sterile gloves
- 3 procedure masks
- Chlorhexidene 2% and alcohol 70% solution
- Sterile normal saline (10 mL vial)
- Dressing tray
- Measuring tape

### KEY POINTS:

Product # REF 88882000001

- Sterile 10 x 10 cm gauze
- 3 10 cc syringes
- 3 mL syringe for locking solution prn
- Locking solution prn
- 3 blunt fill needles
- Sterile leur lock cap(s)
- Alcohol swabs

**PROCEDURE:**

**A. Prepare Patient:**

1. Explain procedure and screen for privacy.
2. Place patient in supine position.

**B. Method:**

1. Assemble supplies.
2. Don mask (Nurses and patient.)
3. Wash hands
4. Examine entire length of extension tubing for damage. If the extension tubing is split or swollen or has other damage or is shorter than 4.5 cm, the catheter may need to be replaced.
5. Starting at the bifurcation, measure the length of usable extension tubing that will remain after the connector and any damaged part of the lumen are cut off.
6. Wash hands.
7. Open the sterile repair kit and the dressing tray. Create sterile field with drapes exposing external segment of the catheter to be repaired.
8. Using the sterile cup on dressing tray, soak sterile 10 cm x 10cm gauze with Chlorhexidine 2% alcohol 70% solution.
9. Using sterile technique put on sterile gloves. If using powdered gloves, wipe powder from gloves with sterile saline and sterile gauze.
10. Thoroughly clean the external segment of the catheter lumen with gauze soaked in chlorhexidine 2% and alcohol 70% solution for at least 30 seconds. Place cleaned segment of catheter on sterile 10cm x 10cm gauze placed on the sterile drape. Allow to dry for 2 minutes.
11. Discard gloves. Using sterile technique put on second pair of sterile gloves. If using powdered gloves, wipe powder from gloves with sterile saline and sterile gauze.

**KEY POINTS:**

- Have patient demonstrate Valsalva maneuver in the event that they have to perform it during the procedure.
- If the remaining tubing length is over 4.5 cm, proceed with repair.
- Strict aseptic technique must be used during this procedure. Touch corner of drape only.

## **PROCEDURE:**

12. Slide the catheter clamp to the distal end of the catheter lumen. Clamp.
13. Remove the cap from the affected catheter lumen and aspirate any fluid in the extension tubing using a sterile 10 cc syringe. Clamp.
14. Slide the green slide clamp provided in the kit onto the extension tubing between the clamp and the catheter bifurcation.
15. Move the catheter clamp up to the green slide clamp. Clamp.
16. Use the scissors provided in the kit to cut off the damaged connector/extension tubing at the 90° angle of the bonding stem. Make the cut as close to the connector as possible. Measure the removed length of extension for future priming volume calculations.
17. Remove the original clamp from the extension tubing. Replace with the appropriate colour-coded thumb clamp provided in the kit and close the clamp.
18. Remove the green slide clamp and then place it between the thumb clamp and the cut end of the tubing.
19. Reposition thumb clamp, sliding it partially over the bifurcation. Close clamp on extension tubing.
20. Remove green slide clamp and dispose.
21. Remove the white replacement connector and collar from the package.
22. To assemble the replacement connector to the extension tube, slide collar over the extension tube so that the tapered end faces the catheter bifurcation.
23. Push the barbed end of the connector into the extension tubing leaving a 1-2 mm gap.
24. Rotate the collar to engage the threads and continue to thread the collar onto the connector until there is no gap between them.
25. Tug on the new connector to test the security of the connection.
26. If the connector pulls apart or seems loose, repeat the repair procedure. A connection failure may be due to one or both of the following reasons:

- a. The replacement connector is not fully inserted into the extension tubing.

## **KEY POINTS:**

**WARNING:** Failure to clamp could lead to air embolism or blood loss.

- Blue – Venous
- Red – Arterial
- Ensure new clamp is put on in proper positioning for clamping. i.e. clamp mechanism (pinch) is at proximal end of lumen.
  
- Failure to clamp could lead to air embolism.
  
  
  
  
  
  
  
  
  
  
- The cut end of the extension tube should be ½ way into the collar.

**CAUTION:** The priming volume of the repaired lumen will decrease by 0.1 cc for initial repair and 0.05 cc for every additional cm of extension tube removed.

## **PROCEDURE:**

- b.** The extension tubing is damaged, preventing a secure connection. If the failure is due to damaged tubing, the catheter may need to be removed and replaced.
- 27.** With a sterile 10 cc syringe, aspirate any air introduced during the repair from the extension legs.
- 28.** Flush the catheter lumen with 10 mL sterile NaCl 0.9%
- 29.** If the catheter is not used immediately, inject each lumen with currently prescribed locking solution in the amounts equal to the revised priming volume of each repaired lumen.
- 30.** At this time, the catheter may be used as before.

## **KEY POINTS:**

**CAUTION:** In the rare event of a leak, the catheter must be clamped immediately. Necessary remedial action must be taken prior to resuming dialysis treatment.

## **DOCUMENTATION:**

- Manitoba Renal Program Health Care Record
  - Integrated Progress Notes
  - Renal Patient Kardex (include date of repair and new instillation volume)
  - Hemodialysis Treatment Sheet
  - Medication Administration Record
  - Vascular access record (indicate date/which lumen was repaired and new instillation volume)
- Facility Health Care Record (for patients admitted to hospital)
  - Integrated Progress Notes

## **REFERENCES:**

Bard Access Systems (May 2011). Catheter repair kit with replacement connector. [Product insert]. Salt Lake City, UT: Author.